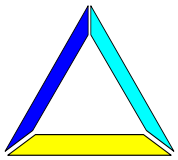
INSTITUTE FOR ECONOMIC RESEARCH AND POLICY CONSULTING IN UKRAINE
GERMAN ADVISORY GROUP ON ECONOMIC REFORM

Reytarska 8/5-A, 01034 Kyiv, Tel. (+38044) 228-6342, 228-6360, Fax 228-6336
E-mail: institute@ier.kiev.ua, http://www.ier.kiev.ua



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The European Union Emissions Trading Scheme - an opportunity for Ukraine -

In 2003, the European Union has decided to introduce a trading scheme for emission allowances of greenhouse gas. Starting from 2005 the scheme requires installations of the main-emitting sectors (energy, ferrous metal, mineral industry, pulp and paper) in all member states to hold certified allowances in the amount of their actual emission levels. After an initial allocation of allowances, affected companies can either trade them with one another, or import additional emission certificates by reducing emission levels in non-EU countries according to the rules set by the project-based mechanisms of the Kyoto protocol (e.g. Joint Implementation). Thus, the scheme offers interesting opportunities for non-EU countries like Ukraine with a good potential for such climate investment. In particular, it generates a great more deal of security for the evolving market for emission certificates since its introduction has irreversibly been decided, and it will be in place even in the extreme case that the Kyoto protocol fails to get into force.
Despite the economic potential for Ukraine, policy makers have so far done little to utilize them. As a result, Ukraine has not yet participated in the evolving carbon market and international ratings perceive the conditions for project-based climate investments to be rather weak. Consequently, the paper finishes with recommending necessary policy measures, in particular **ratification of the Kyoto protocol** and signing **bilateral agreements on emission trade** with interested EU countries.

Outline

1. Introduction

When approving the Kyoto protocol in April 2002, the member states of the European Union decided to jointly fulfill their commitments to reduce anthropogenic greenhouse gas emissions. To achieve this goal, the European Parliament and the European Council established a scheme for greenhouse gas emission trading within the Community in October 2003 (directive 2003/87/EC). Furthermore, a second directive links the EU trading scheme with the global scheme of the Kyoto protocol so that also non-EU countries can benefit by trading emission certificates.[1] In this paper we explain the relevant mechanisms of the EU scheme as well as the possibilities and potential for Ukraine.

2. The European Union Emissions Trading Scheme

The objective of the European Union Emissions Trading Scheme is to reduce emissions of greenhouse gases by 8% of the level of 1990, which corresponds to the commitment set by the Kyoto protocol. Initially, the European trading scheme will affect installations of the following activities:[2]

I. Energy activities
- Combustion installations with a rated thermal input exceeding 20 MW (except hazardous or municipal waste installations)
- Mineral oil refineries
- Coke ovens

II. Production and processing of ferrous metals
- Metal ore (including sulphide ore) roasting or sintering installations
- Installations for the production of pig iron or steel (primary or secondary fusion) including continuous casting, with a capacity exceeding 2.5 tons per hour

III. Mineral industry
- Installations for the production of cement clinker in rotary kilns with a production capacity exceeding 500 tons per day or lime in rotary kilns with a production capacity exceeding 50 tons per day or in other furnaces with a production capacity exceeding 50 tons per day
- Installations for the manufacture of glass including glass fibre with a melting capacity exceeding 20 tons per day
- Installations for the manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain, with a production capacity exceeding 75 tons per day, and/or with a kiln capacity exceeding 4 m^3 and with a setting density per kiln exceeding 300 kg/m^3

[1] See Policy Paper S22 ("Ukraine and the Kyoto Protocol: large prospects, but an unfinished agenda") for a detailed discussion of the protocol, its implications as well as policy recommendations.
[2] Specified in Annex II of directive 2003/87/EC.

IV. Other activities
- Industrial plants for the production of
  (a) pulp from timber or other fibrous materials
  (b) paper and board with a production capacity exceeding 20 tons per day

The European trading scheme will work as follows: within the periods from 2005 to 2007 and from 2008 to 2012 each affected installation will require an 'emission allowance' for the emission of each ton of greenhouse gas.[3] At the beginning of each period the 'emission allowances' are allocated to the installations according to a National Allocation Plan. This plan has to be submitted to the EU Commission by each of the 25 member countries until March 31, 2004. It specifies:

(1) The total amount of 'emission allowances' per country within each period (it has to be set in compliance with the country's national target set up under the Kyoto protocol), and

(2) The initial allocation of 'emission allowances' among all affected installations within the country for each period.

Starting from this initial allocation, all 'emission allowances' are fully tradable within each period.[4] This will insure an efficient allocation of 'emission allowances' (or equivalently, the lowest total abatement costs).

3. Links with the Kyoto protocol

The regulations on trade of emission allowances within the European trading scheme and the Kyoto protocol, which specifies the rules for a global emissions trading system (Box 1), are interconnected in many ways and for various reasons. First, the Kyoto protocol requires all parties to design their own national schemes for ensuring compliance with their national emission targets. In this sense, the European trading scheme is the common scheme that all 25 member states have adopted in order to fulfill their obligations. Second, setting the Kyoto protocol into force is an explicit policy objective of

[3] Initially this will be limited to CO_2. Emissions of other Greenhouse gases from those installations as well as greenhouse gas emissions from installations of other sectors may be included only after the revision of the directive in 2006.
[4] Whether or not they are also tradable between the two periods has not been decided thus far.

the EU and its member states. The European trading scheme clearly demonstrates this commitment by imposing strict rules on a large part of the European economy even before the protocol itself gets into force (this is scheduled only for 2008). Third, flexibility and efficiency of an emission-trading scheme increase with market size, and prices for allowances decrease with increasing supply. Thus, combining the European trading scheme with its large expected demand for allowances and the emission trading scheme of the Kyoto protocol with a large expected supply overhang is clearly in the interest of the EU economy and thus, necessary to receive the political acceptance of the European trading scheme.

Box 1 The Kyoto protocol

In 1997 the United Nations Framework Convention on Climate Change (UNFCCC) initiated the so-called Kyoto protocol with the objective of reducing global emission levels of greenhouse gases (GHG) from 2008 to 2012 (the so-called first commitment period) by 5.2% relative to the level of 1990[a] by initiating a global trading scheme of GHG emission certificates. Each country that signs the protocol is assigned a certain emission target, the so-called Assigned Amounts (AA).[b] After ratification, the country is obliged to meet this target in the so-called commitment period from 2008 to 2012, either by actively reducing its own emission levels, or by using so-called flexible instruments of the protocol within which emission certificates can be traded. Those instruments are:

- *Emission Trading* (ET): An inventory-based mechanism where a country is allowed to sell the unused emission rights (the so-called Assigned Amount Units, AAUs) if actual emission levels over the commitment period (2008-2012) are below the country's emission target (the Assigned Amount, AA).
- *Joint Implementation* (JI): A project-based mechanism where a country achieves a reduction of emission levels through investment in another country listed in Annex I of the protocol. This reduction (relative to a pre-specified baseline) is generated into equivalent Emission Reduction Units (ERUs) and transferred on its own account.
- *Clean Development Mechanism* (CDM): Allows for similar emission reduction projects in developing countries (not listed in Annex I).

The logic of those mechanisms is as follows: Countries whose emission levels exceed their targets can either buy unused emission certificates through ET from other countries, or they have to actively reduce emission levels. However, such reduction efforts do not necessarily have to be located within the country. Rather, the two project-based mechanism (JI and CDM) ensure that such projects will be initiated in countries where the abatement costs are expected to be the lowest. Given the large differences in e.g. technology or energy efficiency across Annex I countries, differences in abatement costs are expected to be significant.

[a] A second commitment period is envisaged from 2013 to 2017, but no concrete objectives are specified as of now.

[b] Typically, for countries in transition this target equals their emission levels in 1990.

Formally, the two trading schemes are connected during the second period of the European trading scheme, which exactly coincides with the first

commitment period of the Kyoto protocol (2008-2012). During those years it will be possible to import emission reductions specified within the regulations of the Kyoto protocol and to convert them into 'emission allowances' on a one-to-one rate (in tons of CO_2 equivalent). This however will be the case only for reductions generated within the project-based mechanisms (Clean Development Mechanism and Joint Implementation)[5] while the Assigned Amount units – that is the reductions based on the difference between actual emission levels and the respective emission targets – are excluded. Furthermore, there will be no initial quota for the amount of imported reductions. Nevertheless, the Commission will reconsider this issue if total imports exceed 6% of the total amount of 'emission allowances' for 2008-2012. This however is rather unlikely to be the case anytime soon after 2008.[6]

4. First market developments

As stated above, the EU Commission has given its members time until March 2004 to present their National Allocation Plan and in particular, to suggest the intended amount of reduction of greenhouse gas emissions within the two periods (2005-2007 and 2008-2012). The two main criteria for approval of this emission cap is that it complies with the country's national target specified in the Kyoto protocol and that it is set at a level below "business as usual" emissions. In other words, even if a country is already expected to meet its obligations from the Kyoto protocol, the European trading scheme still requires a further reduction of emission levels.

In January 2004, the UK was first to publish the draft National Allocation Plan for public consultations. With a Kyoto target of reducing greenhouse gas emissions by 12.5% of its 1990 level during 2008-2012 and a national

[5] With the exception of emission allowances generated by project activities involving nuclear facilities, land use change and forestry projects and large hydro-installations.

[6] According to conservative estimates, the 6% threshold is estimated at around 500 million tons of CO_2 equivalent, which roughly equals the expected total global volume of allowances generated by project-based mechanisms per year. Given that those allowances can also go to non-EU countries such as Japan and Canada or that they can also be transferred to other years, it appears to be quite unlikely that the 6% threshold will be might anytime soon after 2008 (Evolution Markets Executive Brief, July 25, 2003; available at www.evomarkets.com).

emission reduction target of 20% below the 1990 level in 2010, the draft National Allocation Plan envisages a reduction of greenhouse gas emissions of 16.3% below their level of 1990. Since the European trading scheme does so far not include installations of all greenhouse gas-emitting activities, and since it so far only considers emission of CO_2 rather than of the other greenhouse gases such as Methane (CH_4) or Nitrous Oxide (N_2O), this emission cap is rather restrictive. This signals the strong commitment of the UK government to reduce greenhouse gas emissions by as much as possible. Meanwhile, while most other member states have already signaled to have their first draft ready on time, only Spain, Greece and Poland are expected to experience some problems in meeting the deadline in March 2004 as the discussion in those countries is still in an early phase (mainly the specification of a national climate change mitigation program to specify the necessary responsibilities).

With the starting date of the European trading scheme coming closer and in particular with the allocation of 'emission allowances' becoming clearer, many companies that expect to be affected are preparing to trade in the EU carbon market. During 2003, numerous 'test-trades' with a total volume of around 600,000 tons of CO_2 equivalent at prices ranging from EUR 5 per ton in April to EUR 12 per ton in December have been reported.[7] These trades do not only include 'emission allowances' valid in 2005, but also future options on emission allowances in later years.

5. Implications and recommendations for Ukraine

What are the implications of the European trading scheme for non-EU countries? As stated above, the European trading scheme allows for imports of emission reductions generated within the project-based mechanisms of the Kyoto protocol in non-EU countries. Since the European trading scheme forces all member states to reduce their greenhouse gas emissions, there will be a strong net demand for emission allowances. Against this background, imports of additional emission reductions are beneficial for

both, non-EU countries who find solvent buyers of their emission reduction certificates (generated within the project-based mechanisms of the Kyoto protocol) and the EU economy for which those imports are necessary to keep the costs of the European trading scheme on acceptable levels. While in principle this direction of emission trade flows has already been expected within the trading scheme of the Kyoto protocol, the European trading scheme generates a great more deal of security for the evolving market since its introduction has irreversibly been decided, independently of whether the Kyoto protocol will eventually get into force.

Among all countries that signed the Kyoto protocol, the potential of benefiting from the project based Joint Implementation (JI) mechanism is estimated to be the most promising in Ukraine.[8] Consequently, Ukraine could also become one of the main beneficiaries of the European trading scheme. For example, Ukraine's National Strategy Study for Joint Implementation and emissions trading[9] specifies 13 potential JI projects with an overall emission reduction of around 30 m tons of CO_2 equivalent. With present prices for 'emission allowances' slightly above EUR 10 per ton of CO_2 equivalent this corresponds to revenues of EUR 300 m to EUR 400 m.

Despite such potential, Ukrainian policy makers have done little to utilize or even secure the benefits. As a result, Ukraine has so far not at all participated in the evolving market for emission reduction certificates[10] and its legal and technical capacity to host such projects are estimated to be the lowest among all transition countries.[11] Thus, the crucial precondition for Ukraine to utilize its potential within the European trading scheme is the

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[7] "Carbon Market Europe", January 9-2004 (www.pointcarbon.com); The World Bank (2003): State and Trends of the Carbon Market 2003. Washington DC.

[8] Fankhauser, S. and L Lavric. The Investment Climate for Climate Investment: Joint Implementation in Transition Countries. EBRD Working Paper No. 77 (2003).

[9] Ministry of Environment and Natural Resources of Ukraine, Kiev 2003.

[10] Although the Kyoto protocol is set to start only in 2008 (and the EU-ETS in 2005) several firms and public institutions have already started to buy certificates from emission-reducing projects in anticipation of future regulations. From 2002 till Q3 2003 already more than 90 m tons of CO_2 equivalent, mainly stemming from projects in Latin America and Asia, have been traded (The World Bank: State and Trends of the Carbon Market 2003. Washington DC).

[11] Fankhauser, S. and L Lavric. The Investment Climate for Climate Investment: Joint Implementation in Transition Countries. EBRD Working Paper No. 77 (2003).

improvement of domestic conditions for JI projects. This in particular requires two measures:

(1) **Ratification of the Kyoto protocol** as soon as possible.

This is the pre-condition for any participation in any emissions trading scheme, including the European trading scheme. It is a rather simple task since the respective law has already been submitted to the Verkovna Rhada and just needs to be approved.

(2) **Creation of conditions for full participation in JI projects**.

This measure will be more difficult to achieve. The conditions necessary for ensuring transparency and credibility of JI projects have been specified in the Marrakesh Accords in 2001. In the short run, it requires that countries sign bilateral contracts with potential partner countries in which both signatories confirm their general compliance with the rules of the Kyoto protocol. In the long run, the Marrakesh Accords establish standards for institutions that sufficiently estimate own greenhouse gas emissions and register, record and monitor the transfer of emission reductions certificates between countries. Consequently, the signing of memorandums of understanding with interested EU countries as well as with institutions such as the Prototype Carbon Fund of the World Bank would already be sufficient to kickstart JI projects in Ukraine. In the long run however, policy makers must also focus on building up the necessary intuitions.

F.P. Lector: R.G.

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